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SURFACE WARFARE OFFICERS— INITIAL TRAINING FOR FUTURE SUCCESS

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The training of any Surface Warfare Officer begins at the Basic Division Officer Course (BDOC). This training is meant to lay the foundation for an officer's first tour and build the core competencies for their careers. Recent incidents in U.S. 7th Fleet, which took the lives of 17 sailors, caused hundreds of millions of dollars in damage to multiple warships, and reduced our Navy's ability to complete missions, has called this training into question. In this study, we reviewed the effectiveness of BDOC by interviewing BDOC staff and former BDOC students. We identify problems with the Naval Education and Training Command End-to-End Process used for updating and creating learning modules and Surface Warfare Officer School (SWOS) staffing as well as weaknesses in the methodologies used for training. We conclude that the Basic Division Officers Course, and SWOS as a whole, could greatly increase the effectiveness of their training by improving the efficiency of the End-to-End Process, adding an on-site instructional system design team at SWOS, properly staffing each of the Basic Division Officer Course sites, and focusing less on PowerPoint slides and more on situational and interactive learning methods.

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SURFACE WARFARE OFFICERS—INITIAL TRAINING FOR FUTURE SUCCESS

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ABSTRACT

The training of any Surface Warfare Officer begins at the Basic Division Officer Course (BDOC). This training is meant to lay the foundation for an officer's first tour and build the core competencies for their careers. Recent incidents in U.S. 7th Fleet, which took the lives of 17 sailors, caused hundreds of millions of dollars in damage to multiple warships, and reduced our Navy's ability to complete missions, has called this training into question. In this study, we reviewed the effectiveness of BDOC by interviewing BDOC staff and former BDOC students. We identify problems with the Naval Education and Training Command End-to-End Process used for updating and creating learning modules and Surface Warfare Officer School (SWOS) staffing as well as weaknesses in the methodologies used for training. We conclude that the Basic Division Officers Course, and SWOS as a whole, could greatly increase the effectiveness of their training by improving the efficiency of the End-to-End Process, adding an on-site instructional system design team at SWOS, properly staffing each of the Basic Division Officer Course sites, and focusing less on PowerPoint slides and more on situational and interactive learning methods.

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LIST OF ACRONYMS AND ABBREVIATIONS

3M	Maintenance Material Management
ADOC	Advanced Division Officer Course
AQD	Additional Qualification Designation
ATG	Afloat Training Group
BCA	Business Case Analysis
BDOC	Basic Division Officer Course
BLS	Bureau of Labor Statistics
CDR	Commander
COMNAVSURFOR	Commander Naval Surface Forces
COVE	Conning Officer Virtual Environment
CPM	Content Planning Module
DH	Department Head
DoD	Department of Defense
E2E	End to End
FEA	Front-End Analysis
FITREP	Fitness Report
HPRR	Human Performance Requirements Review
ISD	Instructional System Design
LCDR	Lieutenant Commander
LT	Lieutenant
LO	Learning Objective
LOM	Learning Objectives Module
NETC	Naval Education and Training Command
OCS	Officer Candidate School
ROR	Rules of the Road
ROTC	Reserve Officer Training Corps
SME	Subject Matter Expert
SOP	Standard Operating Procedure
SWO	Surface Warfare Officer
SWOS	Surface Warfare Officer School

SWOSDOC	Surface Warfare Officer Division Officer Course
TSR	Training Situation Report
USMMA	United States Merchant Marine Academy
USNA	United States Naval Academy
VMS	Voyage Management System
YP	Yard Patrol Craft

EXECUTIVE SUMMARY

Surface Warfare Officers (SWO) are directly responsible for leading sailors in the day-to-day operations of a majority of the Navy's surface ships. The development of the wide variety of skills required of SWOs begins immediately after commissioning when they attend the Basic Division Officer Course (BDOC). This course is designed to give an introductory level of knowledge for SWOs to build on to develop the set of core competencies that they will need for their first sea tours and the rest of their career. Through the use of surveys and interviews, we critically evaluated BDOC to assess if possible improvements could be made to increase educational effectiveness.

BDOC is a 9-week course taught in San Diego, CA, and Norfolk, VA, that introduces SWOs to a wide variety of topics. Approximately 85% of BDOC is delivered as PowerPoint-supported lectures; however, nine four-hour blocks are spent in a ship driving simulator and several modules are taught via interactive learning. Training requirement updates—such as new instructions—changes based on current events, or shifting focuses from leadership, often happen quickly. As these requirements are delivered to Surface Warfare Officer School (SWOS), courses are improved and modified to reflect the updated requirements of the Fleet.

In order to properly assess BDOC, we traveled to Newport, RI, to interview the BDOC staff and to conduct surveys and focus groups with students who had previously completed the course. By interviewing staff, we were able to obtain a more comprehensive understanding of the process involved with curriculum development and implementation, including both the Naval Education and Training Command (NETC) End-to-End (E2E) Process and the involvement of staff at BDOC and SWOS. Conducting surveys and focus groups with previous BDOC students allowed us to assess their thoughts about BDOC, which learning methods worked best for them, and what they thought could be done to improve the effectiveness of the program.

During interviews with staff members, it quickly became clear that SWOS was operating within a constrained environment where regulations and lack of resources

worked against their attempts to develop and deliver high-quality products. Their general assessment was that the NETC E2E process was arduous and incredibly difficult and inefficient. There is also the distinct feeling that there is a disconnect between the resource sponsor, NETC, and the requirement sponsor, Commander Naval Surface Forces (COMNAVSURFOR). This disconnect causes requirements to be demanded without an understanding of the long and cumbersome process required to deliver them. The lack of specific resources means that SWOS does not have a dedicated instructional system design team; it is developing curriculum using only their time-constrained instructors.

Surveys and focus groups showed that students did value BDOC, but thought there was significant room for improvement. Most notably, students desired more interactive and situational learning activities. When asked about the most effective learning methods, more than 80% of students selected interactive and situational learning activities as opposed to only 31% who found PowerPoint an effective method. This is significant because a majority of the curriculum is based on PowerPoint-aided lectures.

We looked into the cost of several options for modifying the BDOC program and potentially at SWOS as a whole. These included procurement of training ships for both BDOC sites, increase in staffing at both BDOC sites, and the development of an on-site instructional system design team at SWOS. While training ships were a popular recommendation among students in focus groups, they were also the most expensive option at nearly $52M for acquisition cost of 6 YPs and an additional $7M annually for manning the ships (Sutton, 2010). Increased staffing and the design team were much more reasonable at approximately $1.8M (Roth, 2016) and $389,000, respectively (Bureau of Labor Statistics [BLS], 2017a) (Bureau of Labor Statistics [BLS], 2017b). While these dollar figures may seem imposing, they are still far cheaper than this year's incidents in U.S. 7th Fleet. There is no way to know if additional training could have prevented these incidents, but it is possible to identify and correct weaknesses in training that could have potentially helped avoid these disasters.

After considering the weaknesses identified, we recommend the following actions to make cost-effective changes in the BDOC program. The NETC E2E process should be

overhauled to make it efficient and easy to use. Concurrently, NETC and requirement sponsors should develop a way to track coordination of efforts to meet requirements. This would improve the entire Navy, not just BDOC or SWOS. At BDOC, staffing should be increased to facilitate a more interactive and focused learning environment. At SWOS, an on-site instructional system design team should be developed to work with instructors on course development. These experts would be dedicated to curriculum improvement and development and would be able to generate high quality products for use throughout SWOS. A final recommendation would be to require all BDOC instructors to sign continuation contracts to amplify the quality of their work as detailed later in this paper. Implementation of any of these recommendations will increase the effectiveness of BDOC. Implementation of all of them would mean a significant increase in the effectiveness of training throughout the Fleet.

References

Bureau of Labor Statistics. (2017a). Instructional coordinators [Fact sheet]. Retrieved from https://www.bls.gov/ooh/education-training-and-library/instructional-coordinators.htm

Bureau of Labor Statistics. (2017b). Graphic designers [Fact sheet]. Retrieved from https://www.bls.gov/ooh/arts-and-design/graphic-designers.htm

Roth, J. (March 09, 2016). *FY 2017 Department of Defense (DoD) military personnel composite standard pay and reimbursement rates [Memorandum]*. Washington, DC: Office of the Under Secretary of Defense. Retrieved from http://comptroller.defense.gov/Portals/45/documents/rates/fy2017/2017_k.pdf

Sutton, G. (2010, May 13). *A new ship in the yard.* PropTalk. Retrieved from https://issuu.com/cdeere/docs/junpt2010

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I. BASIC DIVISION OFFICER COURSE

Surface Warfare Officers (SWO) play a vital role in today's Navy. The Surface Warfare Community is directly responsible for leading sailors in the day to day operations of our Navy's surface ships, both in port and at sea. In order to do so, SWOs must be incredibly flexible, learning a myriad of skills and successfully executing a variety of shipboard positions. Underlying this flexibility, SWOs must learn and maintain a set of core competencies that allow them to successfully navigate the world's oceans on any of the Navy's surface ships. These SWO core competencies must be developed early and practiced often in order to maintain proficiency, increase combat effectiveness, and keep our Navy safe at sea.

A. BACKGROUND

Over the last two decades there have been significant changes in the initial training SWOs receive (Department of the Navy [DON], 2017a). From 1975 to 2003, SWOs attended a 16-week training course at Surface Warfare Officers School (SWOS) called the Surface Warfare Officer Division Officer Course, or SWOSDOC. Students underwent dedicated training sessions onboard yard patrol craft (YP)[1] until 1993, when SWOS moved from Coronado, CA, to Newport, RI. In 2003, training changed drastically and all prospective SWOs went to their ships with no formal classroom training as before. All of the information they were supposed to learn in 16 weeks at SWOSDOC was simply given to them on a set of CDs that they were to study while performing their billeted job on their ship. In 2008, SWOs began attending a 3-week course designed to give them an introductory level of knowledge. Finally, in 2012, SWOS began the first iteration of the Basic Division Officer Course (BDOC) in Newport, RI, and subsequently moved to its current locations in San Diego, CA, and Norfolk, VA (DON, 2017a).

BDOC was designed as an 8-week course that a newly commissioned ensign would attend prior to reporting to their first ship. The goal of BDOC was to provide these

[1] Yard Patrol Craft are relatively small craft that are used at the United States Naval Academy to expose midshipmen to the basics of underway watch standing, seamanship, and navigation.

Ensigns with the basic knowledge they would need for success on their first ship and throughout their career in the surface fleet. After earning their Surface Warfare Officer designation, junior officers would then attend the Advanced Division Officer Course (ADOC) for 4 weeks of additional training. Both courses include lecture and interactive learning modules, with BDOC focusing more on basic knowledge and ADOC focusing more on ship handling and tactical skills. (DON, 2017) There are currently 120 seats for BDOC students per convening in San Diego and 84 seats in Norfolk. In 2017, SWOS will graduate approximately 850 BDOC students. Each convening is broken into multiple wardrooms made up of approximately 20–30 students per wardroom.

After a Human Performance Requirement Review (HPRR)[2] in 2015, BDOC was expanded to 9 weeks and ADOC was expanded to 5 weeks to allow more time for course work and student development (A. Liggett, interview with authors, October 23, 2017).

B. INSTRUCTION

A majority of the training at BDOC is delivered as PowerPoint assisted lectures. Alongside the lectures, students receive training in a number of instructor guided interactive learning modules such as practicals for electrical safety, damage control, and the Voyage Management System (VMS).[3] There are also ship tours onboard various classes of ships for familiarization and an immersive ship handling trainer called the Conning Officer Virtual Environment, or COVE. COVE is very useful; however, it cannot to be used to its fullest capacity at BDOC because of the lack of contextual ship-driving knowledge possessed by newly commissioned ensigns. Some instruction is delivered by outside entities. The biggest example of this being the 3M[4] (Maintenance

[2] A Human Performance Requirement Review is an assessment of training programs to verify that the programs are up to date and meeting the Navy's requirements. HPRRs involve curriculum reviews, site visits, and gathering input from the Sailors undergoing training to discover training deficiencies and identify potential program improvements.

[3] The Voyage Management System is an electronic charting system containing digital nautical charts with various charting functions to allow ships to safely navigate without the use of traditional paper charts.

[4] 3M is the primary program used to track routine maintenance in the Fleet.

and Material Management) University that is given by staff from the Afloat Training Group (ATG).[5]

1. Learning Modules

The majority of BDOC curricula is developed at SWOS by the instructors in the little spare time they have. These courses cover a wide variety of topics including damage control, ship engineering, administrative paperwork, seamanship, navigation, watch standing and more. Each course is developed over time by post second division officer tour LTs and LCDRs. SWOS has the subject matter experts (SME) for many of these topics, so it makes sense that they are developed in house with experts on hand.

BDOC uses a blend of general Navy curriculum developed outside of SWOS and curriculum developed on-site at SWOS in Newport, RI. Learning modules such as general division officer leadership (managing a division, mentoring sailors, etiquette, etc.) and 3M are courses taught Navy-wide and not developed specifically for SWOS. Due to the Navy wide applicability of these courses, the BDOC curriculum coordinators see this as a good thing as it reduces the modules that SWOS must create and update. The majority of BDOC curriculum is developed at SWOS in Newport, RI by post second tour Lieutenants (LT) and Lieutenant Commanders (LCDR). There are no dedicated staff members to manage curriculum development, which implies SWOS instructors must develop curriculum as a collateral duty in addition to their instructor duties (A. Liggett, interview with authors, October 23, 2017).

SWOS coordinates with outside entities to change curriculums that they do not own. SWOS sends a request to the Navy Leadership and Ethics Center, which owns the Division Officer Leadership course for example, with how and why to make a requested change. Requests can vary in nature and complexity, ranging from small changes in methodology to changes to learning objectives.[6] Modifications to teaching methods are

[5] The Afloat Training Group is an organization primarily comprised of subject matter experts which visit all ships to conduct training and assessment for certifications to show readiness in various warfare areas.

[6] Enabling objectives are the key points that each lesson must touch on and be understood for said training to be deemed effective

relatively easy and owning entities can make adjustments and return the curriculum to SWOS for implementation. Changing learning objectives is much more complex and requests for them often result in either rejection or the start of a lengthy and complex process.

2. Personnel

The staff for all schools at SWOS (not including command courses) are primarily comprised of pre-department head LTs. Each BDOC site has between 9 and 11 officer staff positions, slightly less than the 12–15 officers required to properly conduct a COVE session. Thus, to properly conduct a COVE session, staff members must be pulled from other areas outside of BDOC. In addition to these officers, some senior enlisted and civilian SMEs teach certain courses in navigation and engineering. Billeted instructors to SWOS currently undergo a 3-week Navy instructor course in Groton, CT followed by an additional 3 weeks of training in Newport, RI. This training is directed at instructing courses, not designing them. Instructors receive no specific curriculum development training even though the curriculum is developed almost exclusively by them (A. Liggett, interview with authors, October 23, 2017).

Instructors at BDOC are not required to sign a commitment for follow on tours. This means that some instructors are on their final tour before being leaving naval service. Since they have no future aspirations in the Navy and no motivation to perform at a competitive level, some (but not all) of these terminal instructors put forth a minimal effort and teach with very little enthusiasm. It is possible that requiring a future service commitment from officers filling BDOC instructor billets would increase performance and enthusiasm while teaching. Some people will work hard regardless of if they are leaving the Navy or not; however, guaranteed future in the Navy would ensure that instructors put forth maximum effort to maintain a competitive fitness report (FITREP).

C. CURRICULUM DEVELOPMENT

Instructors work through a process called the Naval Education and Training Command Course Development, Revision, and Modification End-to-End Process to develop the curriculum at BDOC. Originally, the process was designed so that all Navy

training would be developed in coordination with, and evaluated by, NETC and the appropriate Navy Learning Centers before being implemented at Navy schools throughout the fleet. This was supposed to verify that training was being conducted effectively, meeting Navy requirements, and being properly funded. This theory is sound, but in practice the E2E process has become an arduous process that does not allow learning modules to be quickly adapted in the fast-paced environment in which our Navy operates.

1. Instructions

The entire NETC E2E process is guided by five documents, listed as both instructions and guidance, plus a standard operating procedure (SOP) that is to be used only as a supplement to the other five. The instructions cover a variety of topics involved with the development process including building lesson plans, guiding acquisitions from content developers, and the utilization of the software that is required for the NETC E2E process. In total, more than 500 pages of instructions guide untrained instructors through the curriculum development process. The SOP references requirements and processes, which are often only found in other instructions, without further details. This forces instructors to reference back and forth between multiple documents to come up with the guidelines for building a lesson plan in accordance with the Navy's instructions. While reading into this process, we learned first-hand that the instructions are not only convoluted, but at times incredibly difficult to read. In practice, this makes the process nearly impossible for the average person to successfully navigate in an efficient manner (Naval Education and Training Command [NETC], 2014).

2. The NETC E2E Process

The E2E process is long and complex. A diagram of the official process, taken from the NETC E2E SOP can be seen in Figure 1. The process is designed to work in conjunction with the Department of Defense (DoD) acquisition process. The idea is to give adequate, but not excessive, funding to training initiatives. This process causes a delay that is antithetical to the ideally flexible nature of training (NETC, 2014).

According to the NETC E2E SOP, the process begins with a trigger, which is an event, or series of events, that show(s) an assessment is needed for an area of training (NETC, 2014). Triggers could include assessments of the Fleet, changes in the rating structure, or input from the Fleet. If a deficiency is found during the assessment, it is analyzed, and a Training Situation Report (TSR) is created to assess any current training related to the deficiency and what could be done to improve it. From the TSR, a Job, Duty, Task Analysis is done to show what work is expected to be completed. Then the general framework of what needs to happen can be entered into the Content Planning Module (CPM).[7] Next, the Front-End Analysis (FEA) phase begins, which is comprised of 9 steps to assess the current state of training, the desired end state, the difference between the two, and the best way to fulfill the missing training. The ways to fulfill the training includes the forms of media to be used, the methods of instruction, and various other aspects of training that might be necessary to meet the desired end state. Once this is complete, the plan moves to an approval process, and then to the Business Case Analysis (BCA), to assess the time and resources (instructors, classrooms, time for development, time for instruction, etc.) that will be required. Once the required resources are approved, the detailed Learning Objectives (LO) can be developed in the CPM. The LOs will be the basis of designing the actual course in the LO module. The LO has various modules within it to aid in the development of lectures, assignments, assessments, etc. This concludes the design process and the training module can then be delivered to students and reassessed for effectiveness (NETC, 2014).

3. User Assessment

We visited SWOS to interview several staff members responsible for developing and implementing the curriculum for BDOC. When asked about their experiences with the NETC process, they mentioned a burdensome process and instructions that are "impossible to follow to the letter of the law." The staff members felt that their hands were tied when it comes to curriculum development because they are constrained by a

[7] The Content Planning Module is a computer program that was designed as part of Authoring Instructional Materials (AIM), which was a system designed in the 1980s with the goal of automating curriculum design to improve the efficiency in which it could be delivered to the Fleet. CPM allows users to enter a framework for a course including a general structure and learning objectives.

very limited pool of resources, mainly the CPM/LO module format. While developing presentations in Microsoft PowerPoint is fairly straight forward, developing the same presentation with the CPM/LO module is much more complex and wastes time (V. Boza, interview with authors, October 23, 2017).

Staff members commented that making even the most common-sense changes was impractical and took far longer than reasonable to make their way through the process. They stated it takes approximately two years to make substantive changes to a training module. Though the staff can make minor changes such as punctuation, grammar, or changing a picture to reflect updated uniform standards, they are unable to change anything related to learning objectives. One common-sense change they were still waiting on was the removal of the Oliver Hazard Perry class frigate from the curriculum. All ships of this class have been removed from naval service as of 2015. Being unable to remove them from the curriculum is a waste of student and instructor time and effort (V. Boza, interview with authors, October 23, 2017).

D. REQUIREMENTS AND RESOURCES

Carefully crafted requirements and properly allocated resources are key in developing effective and efficient training programs. By having a clear set of requirements and the means to build and implement lesson plans for them, training commands are better able to execute their mission. A disconnect between requirement sponsors and resource sponsors exists that makes it difficult for SWOS to develop content or update old lessons with new information.

1. Requirement Sponsor

The requirement sponsor is the entity that requests a particular learning module be developed. For SWOS, and by proxy BDOC, the requirement sponsor is generally COMNAVSURFOR. The surface warfare specific curriculum is under their purview and can be directly influenced by them. When a deficiency is identified in the surface fleet, COMNAVSURFOR directs SWOS to develop a learning module to address it. At that time, SWOS instructors identify what needs to be accomplished and begin building the module (V. Boza, interview with authors, October 23, 2017).

A recent implementation in the BDOC program was a bridge-to-bridge communications module. Commanding officers noticed a common theme that junior officers were reporting to their ships with little to no knowledge of how to properly communicate on the bridge-to-bridge radio. They passed this up to COMNAVSURFOR who passed it on to SWOS. SWOS then developed a learning module for students to spend 4–5 hours learning how to speak on bridge-to-bridge, and subsequently executing 24 bridge-to-bridge interactions. This program is still in the testing phase, but it provides insight into the process of initiating the development of a new learning module (A. Liggett, interview with authors, October 23, 2017).

2. Resource Sponsor

The resource sponsor is the entity that provides the funding and guidelines for instruction and curriculum development. For SWOS, this is the NETC. The funding that SWOS receives is not directly tied to the requirements that are demanded of it; instead, SWOS receives general funding to accomplish all of its goals. If additional demands are required, additional resources are not always provided. In addition to funding, NETC has guidelines for approving curriculum that is developed at SWOS (V. Boza, interview with authors, October 23, 2017).

II. STUDENT AND STAFF INTERVIEWS, SURVEYS, DATA, AND ANALYSIS

A. METHODOLOGY

For a comprehensive look at the effectiveness of the BDOC program, we wanted the opinions of both SWOS staff and of prior students. To accomplish this, we interviewed staff in pairs for a candid review of BDOC, including what they thought worked well and what could be improved. For the former students, we conducted optional surveys, asking demographic information and numerical opinion-based questions to obtain statistical data on BDOC to be evaluated. We also conducted student focus groups to facilitate honest discussion about how best to improve the current system.

1. Staff Interviews

Upon arriving at SWOS, we conducted staff interviews. We interviewed the Director of Division Officer Training (N72), CDR Andrew Liggett, the Academic Director, Fleet Training (N724), LCDR Victor Boza, and two civilians, the Curriculum Manager for N72, Christine Bouressa and the Deputy Director of N72, James Marion, who have been heavily involved with the development and evolution of BDOC since its inception in 2012. We first interviewed CDR Liggett and Mr. Marion, then interviewed LCDR Boza and Mrs. Bouressa separately. The first goal with these interviews was to obtain first-hand knowledge of how curricula at BDOC was developed and how it has evolved. The second goal was to identify the process that is used at SWOS to request changes in the BDOC program. Lastly, we hoped to identify possible shortfalls in the process that work against SWOS achieving its goals. Each of these points provided a better perspective in order to thoroughly understand how the NETC process works in practice instead of just in theory.

2. Student Surveys

We prepared a short two-page survey, found in Appendix A, to be filled out on a voluntary basis by SWOs attending ADOC. We chose to survey ADOC students because they had all completed BDOC and had all recently completed their first ship tours.

BDOC has evolved since these students attended it; changes include an additional week in course length as well as more COVE time. Coming directly from their first ship tour, the students were in an ideal position to give honest and insightful feedback about their BDOC experience and how it prepared them for their first tours. The changes to BDOC, while significant, were minor enough to not significantly affect the opinions provided by the participants.

The survey for the ADOC students was developed with metrics that allowed us to compare students' opinions with their demographic information to look for correlations between the two. The questions were number based for data input purposes. The survey began with demographic questions to identify possible trends, followed by 1–10 opinion-based questions to describe the student's experiences on their first ships. Our plan was to gather as much data as possible in a relatively short survey to identify possible correlations between positive or negative trends in student experiences.

3. Focus Groups

We asked students to voluntarily participate in focus groups to talk about their experiences in BDOC and how it affected their first tour experience. A script of questions, seen in Appendix B, was used to facilitate discussion, but participants could deviate from it if they desired to provide opinions about BDOC and the training process in general. We wanted to provide an open forum for students to give honest and anonymous feedback on their BDOC experience without fear of reprisal. This proved highly effective in identifying outlying areas of concern that the surveys did not capture.

4. Literature Review

We reviewed several publications concerning theories of learning and development. One publication, while small, stood out greatly because of the prevalence of PowerPoint in Navy classrooms. This publication, *The Cognitive Style of PowerPoint*, highlights many issues with PowerPoint (Tufte, 2006). Some of the major issues are that PowerPoint presentations are more focused on the presenter delivering information than the audience receiving it and that the slides either give the audience only a small portion of the picture or more information than they could possibly process. Either way, the

information will most likely not be retained well. This article reinforces the old adage "death by PowerPoint" and shows how PowerPoint can be a useful tool but should not be a primary method for the conveyance of information.

Of more salience were multiple incident reports that came out while this research was being conducted. These reports covered multiple Class A mishaps that have happened over the previous 12 months.[8] They gave many details regarding a grounding and multiple ship collisions, but several of these reports also had detailed histories of SWO training, as well as assessments from high-ranking officers about the current status of training. These assessments gave insightful perspectives from experienced senior officers on how the training pipeline has changed over the years and how that has affected both training and the SWO community as a whole.

B. RESULTS

Our hypothesis was that BDOC, while an effective tool in training young officers, may have room for improvements along the lines of producing higher quality seamen and ship handlers, as well as more confident leaders. The questions asked in the surveys and the focus groups helped us to analyze this. The results from the surveys did not correlate as highly for some questions as originally anticipated, or in other words, did not support our hypothesis. Only a small number of variables had an effect on a student's first tour experience. The interviews with both staff and students, however, yielded much more information than originally anticipated. The staff was very concise about things that could be changed for the better. The students also provided much more depth than anticipated regarding suggestions for improvements and assessments of why certain things at BDOC were more useful than others.

1. Staff Interviews

There were two main insights that arose during the staff interviews. The first was a more comprehensive understanding of curriculum development at SWOS, the NETC E2E process, and how it is employed at SWOS. Since SWOS receives requirements

[8] A Class A mishap is an incident that causes over $2 million in damages and/or results in fatalities or permanent disabilities

directly from their requirement sponsor, COMNAVSURFOR, they are expected to implement changes quickly; however, the NETC E2E process is a bottleneck, and does now allow for quick change. The staff's opinion was that there is a disconnect between the resource sponsor and the requirement sponsor, and that there is no official way to relay inefficiencies to NETC. COMNAVSURFOR requires a quick turnaround to meet the needs of the Navy. NETC requires an arduous and time-consuming process before any changes can be made, which works against the needs of the requirement sponsor.

Due to the extensive time and effort put into the NETC process, SWOS occasionally creates pilot programs before making them part of the official curriculum. This is sometimes done by instructors taking the initiative to fill a knowledge gap or utilize a better way of learning a topic. A perfect example of this is something called the "parade of lights." The instructors identified that students were having difficulty learning the lighting configurations from the U.S. Coast Guard Rules of the Road (RoR), which is required knowledge in order to pass the BDOC course. To supplement the official method for teaching these lighting configurations, which are PowerPoints and reading the RoR handbook, the instructors designed a COVE scenario with a series of ships lined up so students could see a detailed visual representation of the lighting configurations of different vessels. With positive reviews from students, the scenario was passed to SWOS for approval, and eventually distributed to the other SWOS sites to be utilized in other COVE stations. The staff saw this as an example of how the system should work, but not how it did (A. Liggett, interview with authors, October 23, 2017).

The second insight was some factors that staff thought could potentially be improved for SWOS to better inculcate junior officers with the knowledge and skills that they need to properly execute their jobs. One widely repeated issue was the lack of dedicated, trained staff for curriculum development. Instructional System Design (ISD) is a field dedicated to building effective learning plans, yet SWOS is unable to hire a dedicated team. All staff members mentioned an ISD team numerous times and highlighted it as the easiest and most effective way that SWOS could improve their training program. They all recommended a team of three to four ISDs and one graphic

designer to work alongside the SMEs to quickly design effective lesson plans as they are needed (V. Boza, interview with authors, October 23, 2017).

While developing coursework for two programs outside of BDOC, SWOS employed both off-site and on-site contracted ISD teams. For the Quartermaster A school program, off-site contractors were used.[9] They were unable to quickly access the SMEs for details about the course development because they were not on site with them. The result was a product that was slow to develop and did not meet the expectations of the SMEs. The on-site team developed a course for the international program at SWOS. This team was able to access the SMEs anytime and quickly developed a high-quality product. A small, dedicated team of on-site contracted ISDs with a graphic designer would greatly increase SWOS's ability to flex lesson plans as desired by COMNAVSURFOR (V. Boza, interview with authors, October 23, 2017).

2. Student Surveys

Table 1 contains the summary statistics of the 52 participants who took part in the survey. Sixty-nine percent of participants were male and the average age of was 26. Twenty-five percent commissioned from either the United States Naval Academy (USNA) or the Merchant Marine Academy (USMMA), 42% from a Reserve Officer Training Corps (ROTC) Unit, and 33% from Officer Candidate School (OCS). Prior to commissioning, 22% were enlisted. The participants spent various amounts of time onboard their ship prior to BDOC with 46% never going to their ship, 21% being onboard for less than 2 months, 19% for 3–4 months and 13% for more than 5 months, which can be seen in Figure 2.

The summary statistics of student responses to the subjective questions can be found in Table 2. Students do place value on the BDOC course, but also feel that it did not adequately prepare them for the tasks they had to accomplish onboard their first ship, as seen in Figure 3. Students overwhelmingly prefer more interactive methods of instruction than PowerPoint presentations. Interactive instruction methods such as COVE and VMS were found effective for learning by over 80% of the participants, as seen in

[9] A school is initial rating specific technical training that is given to sailors.

Figure 4. Less interactive, but still engaging teaching methods, such as real-world case studies and interactive conversations with instructors, were found useful by 62% of participants. PowerPoint presentations, which make up a large majority of instruction given Navy wide, were found effective by a mere 31% of participants. The only methods of instruction that appeared to be impacted by independent variables were computer based training and real-world case studies, as seen in Table 4. Prior-enlisted participants found computer-based training slightly more useful than non-prior-enlisted. Real-world case studies were more useful for participants who had been on a ship prior to BDOC.

After conducting a regression analysis, shown in Table 3, commissioning source and time onboard ship before attending BDOC, were the only independent variables that were strongly correlated with dependent variables. The most strongly correlated dependent variables for these were familiarity with shipboard life and being prepared for everyday tasks on the ship. Commissioning from the USNA and going to a ship before BDOC greatly increased how familiar students were with shipboard life and how well prepared they were for daily tasks after attending BDOC. When asked if better preparation would influence their decision to stay on as department heads, the only independent variable that influenced their response was that if the participant went to the USNA, they were more likely to respond yes or maybe, as seen in Table 4.

The results of this survey were not as telling as we had initially hoped they would be; however, they did confirm some assumptions we had going into this study. Interactive and hands on training was shown to be the preferred method by nearly all participants in the survey, while PowerPoint and computer-based training, the most commonly used Navy training methods, were highly unpopular. Participants were shown to be better prepared for shipboard life and daily tasks if they had time onboard a ship before BDOC or were from commissioning sources which gave them some shipboard experience. This implies that shifting to more hands on learning methods and increasing experience on ships before students attend BDOC would be beneficial to them when they go to their first ships.

3. Student Focus Groups

The student focus groups provided insights for potential improvements at BDOC from a prior student perspective. One common theme for improvement was a decrease in PowerPoint based lessons, an increase in interactive lessons, dramatic changes to the 3M lesson plan, and time spent on a ship for familiarization before attending BDOC. Some other common themes were that BDOC teaches students to take a test, but not how to practically apply knowledge, and that BDOC did teach a wide range of topics but largely missed the things that division officers do a routine basis.

The participants were almost unanimous in their opinions on instructional methods. Though some felt that PowerPoint slides were a good resource for future reference, few thought they were effective for learning in a classroom setting. All participants preferred more engaging interactive training models, which coincides with the survey results. The modules where students were able to physically interact with the learning objectives were the most popular and nearly all of the participants desired more COVE time. Many participants mentioned that the YP program used at the USNA would be beneficial at BDOC sites, and would give new SWOs a chance to actually be out on the water learning how to drive a ship. When informed that COVE time had been increased since they took the course, all participants agreed that it was a beneficial change.

Most participants wanted more hands on practical application of skills. One of the biggest specified instances of this is the 3M learning module. Every focus group mentioned 3M and that it was a waste of time. Few participants had been to a ship long enough to become involved in the 3M program which led to a lack of context for learning. Multiple students stated that after several months on their ships post BDOC, they had taken the same course at the 3M University that is conducted for ships on the waterfront, and that it was very helpful. The lack of general knowledge about the program combined with no hands-on 3M training, and no testable material at BDOC, made 100% of the focus group participants denounce 3M.

Many participants mentioned that a way to correct this deficiency would be to send prospective SWOs to a ship for 2–3 months prior to attending BDOC. They reasoned that a short time on a ship prior to attending BDOC would allow them to become familiar with day-to-day life. The short time on a ship would give them a better foundation before attending BDOC, which would lead to a more comprehensive understanding of the course material. Some students disagreed that ship time helps, these students went to their ships before BDOC, but received very little practical experience to build on at BDOC because the ship was not operational at the time. The general consensus of each group was that if a student was able to go to an operational ship for approximately 2 months prior to BDOC, they would have a significant advantage over students who did not.

A common issue mentioned was that participants often felt BDOC was taught to pass a test instead of teaching them how to practically use the knowledge. They also felt that BDOC often skipped over important day-to-day knowledge in favor of more technical teachings that would not be used as routinely. This is counterproductive and participants stated they most likely would not benefit at BDOC from an engineering drawing, for example, but would have benefitted from learning about day-to-day duties like processing administrative paperwork or building briefs.

III. COST OF CHANGE

SWOS has limited resources and is required to navigate around bureaucratic restrictions that are in place. There are several possible avenues to increase the effectiveness of BDOC, and SWOS as a whole. We have highlighted realistic options and developed estimates for implementation. These options include procurement of YPs for student use at BDOC sites, increases to instructor manning, and creating an instructional system design team at SWOS for curriculum development. These estimates are meant to give an idea of the costs and benefits of these changes that could improve the level of training delivered to newly commissioned officers in the BDOC program.

A. YARD PATROL CRAFT AS TRAINING SHIPS

Yard patrol craft are training ships that are designed for use at the USNA to familiarize and train midshipmen in the basics of ship handling, seamanship, navigation and general shipboard watch standing. Relative to other ships in the fleet, they are very small at only 119 ft long and 27.9 ft wide, but still deliver an underway ship handling experience (DON, 2017b). For years, midshipmen at the Naval Academy have had access to YPs, giving them early access to experiences that are not present in the other commissioning sources. During focus groups, USNA graduates stated that their experience onboard the YPs gave them a good base on which to build their watch standing skills and left them with a significant advantage over the Ensigns with no such experience. Stationing YPs at each of the BDOC sites offers a moderately priced opportunity to supply students with real world underway experience.

The newest of the YPs at the Naval Academy, the YP-703 class, are approximately $8.6M per unit for procurement (Sutton, 2010). Each learning site would require at least two YPs, but preferably three. Three YPs would allow two ships to be utilized for training while one is in a maintenance period. Each YP is manned by 4 officers and 6 enlisted crew. According to the Office of the Under Secretary of Defense's composite standard pay and reimbursement for the Department of the Navy, shown in

Figure 5, the average annual composite rate for an O-3 is $151,878.[10] Using an E-6 as the average for the enlisted crew, the annual composite rate is $97,742. This brings the annual personnel cost to $1,193,964 per YP (Roth, 2016). Associated fuel and maintenance costs would also need to be calculated but these would vary depending on underway time, price of fuel, and required maintenance.

Implementing a YP program at BDOC would require lengthening the course or removing other course materials. Making the course longer would involve removing one convening and redistributing those 204 seats into the remaining classes. This would require increasing capacity by approximately 34 seats per convening between the two BDOC sites. Adding these seats would require adding classrooms and instructors at one or both BDOC locations. This is not currently feasible because of the available facilities at each base. Removing course materials is more feasible but would require a comprehensive review of the coursework at BDOC to find several days' worth of materials to remove. In our opinion, the best option would be to replace the comprehensive 3M training that is given now with a brief overview of the 3M program. This would eliminate a significant amount of classroom time and allow students to have underway time onboard the YPs.

This option has the highest overall cost of our proposals; however, it is also one that was routinely mentioned during focus group conversations. A review of the possibility of implementing YPs was also an action item in the Chief of Naval Operations' *Comprehensive Review of Recent Surface Force Incidents* (DON, 2017a). Assuming three YPs at each learning site, the initial cost of procurement would total $51.6M (Sutton, 2010), with an annual personnel cost of $7.2M (Roth, 2016). Compared to the other options, this is a relatively expensive, but would give students hands-on experience with standing watch and ship handling, as well as basic skills in seamanship and navigation. These are all fundamental core competencies that aid SWOs in building the more technical skills they need for their careers to be successful.

[10] The composite rate includes all pay, benefits, and other compensation that is provided to a service member.

B. ADDITIONAL NAVY STAFFING

Each BDOC location has between nine and eleven officers on staff; however, it takes twelve to fifteen staff members to adequately run a COVE session. This means that all BDOC staff, plus additional staff from outside the BDOC program have to be qualified and subsequently instruct COVE sessions any time they happen. With every staff member being routinely pulled from their work, they have less time to work on curriculum development or to give students additional instruction. While observing the ADOC courses at SWOS, numerous students were observed leaving COVE modules as much as two hours early, sacrificing valuable training time. Additional officers on staff could provide more opportunities for staff members to interact one-on-one with students to provide more in-depth training. It would also increase the amount of time that each officer could spend working on curriculum development and improvement.

During the staff interviews and the student focus groups, interest was voiced in having officers with additional qualification designations (AQD)[11] billeted to BDOC. These officers have advanced training and knowledge in a specific area and could provide a viewpoint and understanding of the source material that most SWOs do not fully possess. This would put them in a position where they would be the expert to both develop and teach the curriculum, using not only references, but also first-hand experience (V. Boza, interview with authors, October 23, 2017).

Each site would benefit from having no less than 15 fully trained officers on hand at any given time. This would allow them time to work with their wardrooms, instruct lessons, and properly execute COVE sessions. Because of the rotational nature of these billets, there is a high probability that at least 1 of these officers will be in training, so a minimum of 16 billeted officers would be ideal. Each additional officer would cost $151,878 per year. Assuming there are on average 10 officers per site now, there would need to be 12 additional officers total, costing an additional $1.8M per year (Roth, 2016).

[11] Officers with AQDs have special training in various warfare areas and have served in positions where they utilized that training such as being a Warfare Tactics Instructor (WTI) at a Learning Center or the Navigator or Damage Control Assistant on a surface ship.

C. INSTRUCTIONAL SYSTEM DESIGN TEAM

All of the staff members interviewed at SWOS consistently identified the best option for SWOS would be to hire an on-site ISD team. ISDs utilize various theories and methods of learning to build learning modules and materials to better impart knowledge to students. Having a dedicated ISD team in the building at SWOS to work with the SMEs would allow lesson plans to be developed in real time as they are requested. The team would be comprised of three to four instructional system designers and one graphic designer. The team would solely work on course development and improvement, which would remove that collateral duty from the officers on staff at SWOS and allow them to be more engaged with their students.

According to the U.S. Bureau of Labor Statistics, the average pay for an instructional coordinator is $62,460 per year (Bureau of Labor Statistics [BLS], 2017a) and $47,640 per year for a graphic designer (Bureau of Labor Statistics [BLS], 2017b). According to the U.S. Bureau of Economic Analysis, civilian government benefits average $38,450 per year (Edwards, 2017). If a team of 4 were hired, with 3 instructional system designers and 1 graphic designer, the cost would be approximately $389,000 per year (BLS, 2017a) (BLS, 2017b). This is largely the most cost-effective option and would have the greatest impact. A 4-person team developing high quality learning modules at SWOS would benefit all programs at SWOS; increasing the effectiveness of learning modules for better comprehension and retention of knowledge, leading to overall better learning and better officers.

IV. DISCUSSION AND RECOMMENDATIONS

A. DISCUSSION

This study documents the current methodology employed at BDOC and the results of interviews, surveys, and focus groups about the course. The purpose of BDOC is to prepare new SWOs for their first tours and lay the foundation for the rest of their careers. This study was designed to identify possible improvements to the effectiveness of BDOC and estimate what the cost of those changes would be. Many recommendations, with varying levels of cost and complexity, were offered for the improvement of BDOC. Some of these have been implemented since the students surveyed took the course, such as an additional week being added to the course, and additional COVE time. Others still hold potential to improve the course and benefit future generations of SWOs.

The most common themes among staff were the difficulties present in the NETC E2E process and the disconnect between the resource sponsor, NETC, and the requirement sponsor, COMNAVSURFOR. Between these two issues, implementing real change at SWOS with efficiency is procedurally difficult. Due to the lengthy change process and the high expectations that are demanded of them, SWOS is put in a difficult position where they are forced to appeal to both NETC and COMNAVSURFOR. This leaves them with few options to efficiently affect the course change as desired.

From the student surveys and focus group, two things were apparent: Students desired more hands-on and situational learning, and students believed time on a ship prior to BDOC would give them a better frame of reference for absorbing the material in the course. While only 31% of students found PowerPoint to be an effective learning tool, more than 80% found situational and interactive learning exercises to be effective. Considering BDOC is largely based on PowerPoint aided lectures, this shows an area where significant improvement could be made. With only 31% of students finding the primary method of instruction useful means that this methodology should be revisited and an alternate method identified. Additionally, having students onboard their ships for a

short time prior to BDOC could help with knowledge retention as it would increase familiarity with basic concepts.

B. RECOMMENDATIONS

From the staff interviews, student surveys and focus groups, and cost estimations of potential options, we have several recommendations for the Navy to implement regarding the BDOC program. First, the NETC E2E process needs to be reviewed to make it usable for the end-users. If it takes two years for a learning center to update course material, they will not meet the requirements of the resource sponsor. The process should be overhauled so material can be easily created or updated within 3–6 months. Additionally, NETC and requirement sponsors should have a means to track coordination of effort. If COMNAVSURFOR has an immediate requirement, the NETC process should not impede its development. Anything less than this does not allow the learning center to keep up with the ever-changing and fast-paced nature of today's Navy.

Second, increase staffing at BDOC locations to allow the BDOC staff to operate the COVE trainer without pulling in officers from outside the program. By increasing the staff to the proper level, BDOC instructors could properly facilitate the COVE trainer, and the collateral responsibilities of reviewing and updating course material would be spread out among more officers. This would allow instructors to spend more time in the COVE trainer interacting with students, and not rushing to complete other duties. Though this is an expensive recommendation, the cost would be offset by an increased level of attention given to developing students' skills.

Last and most important, an ISD team should be formed and located on-site at SWOS in Newport, RI to develop and improve courses alongside the SMEs. This team would be able to improve any course developed by SWOS. By having them on-site, the team could easily interact with instructors and staff members to develop high quality products built with the most up-to-date learning methods. With a total cost of less than $500,000 per year, and a potential to positively affect every program that SWOS operates, this recommendation has the greatest cost to benefit ratio. It also had unanimous support from all of the staff interviewed at SWOS.

Each recommendation has pros and cons and some are more feasible than others. Making changes to large processes that affect the entire Navy is inherently more difficult than adding personnel to a single location. Nevertheless, each recommendation highlights a proposal to improve a weakness in the training system. Identifying and correcting these weaknesses is key to delivering better training to new SWOs. By doing so, the Navy can deliver the next generation of SWOs the foundation they need for their first tours and the rest of their careers.

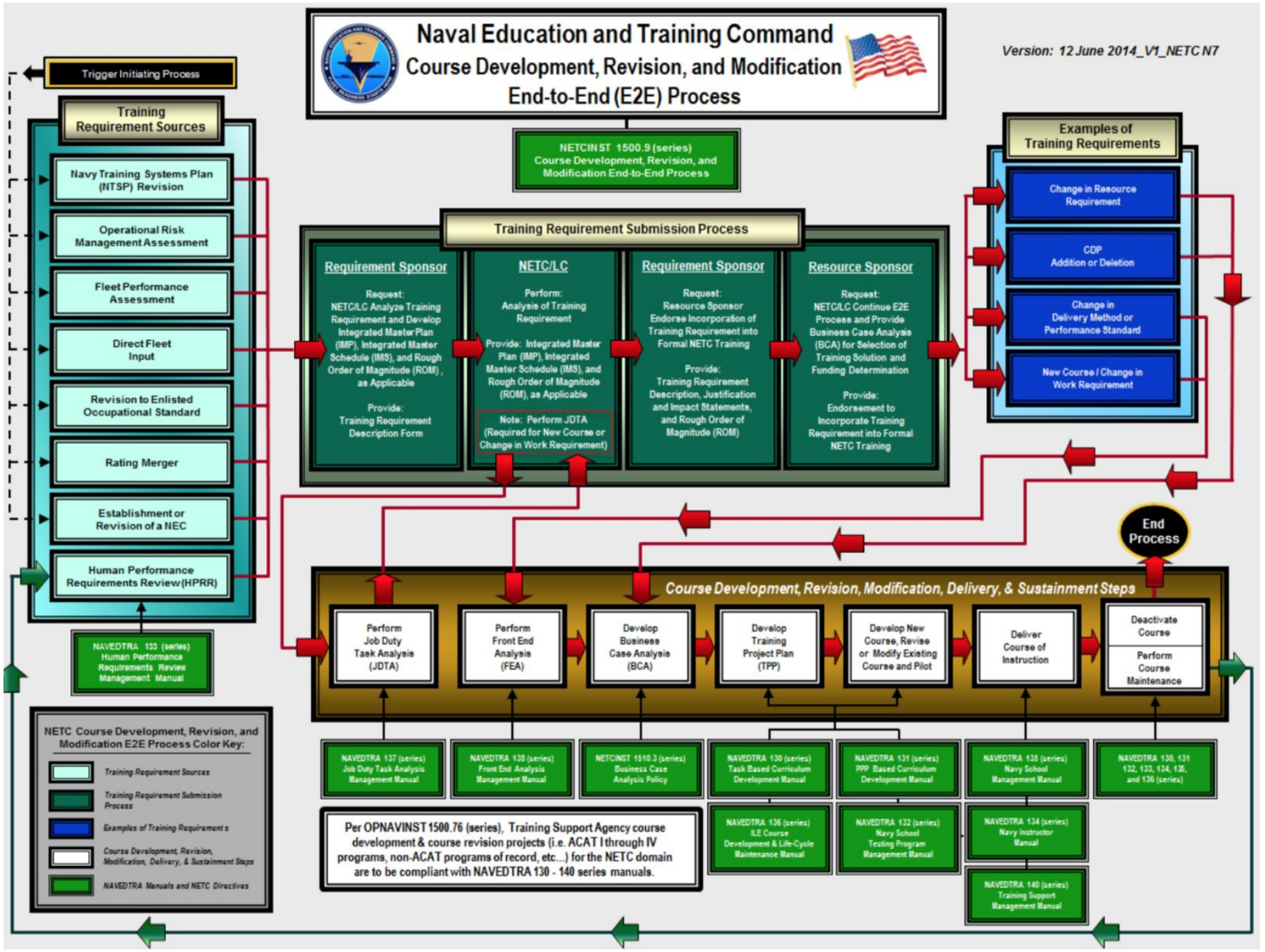
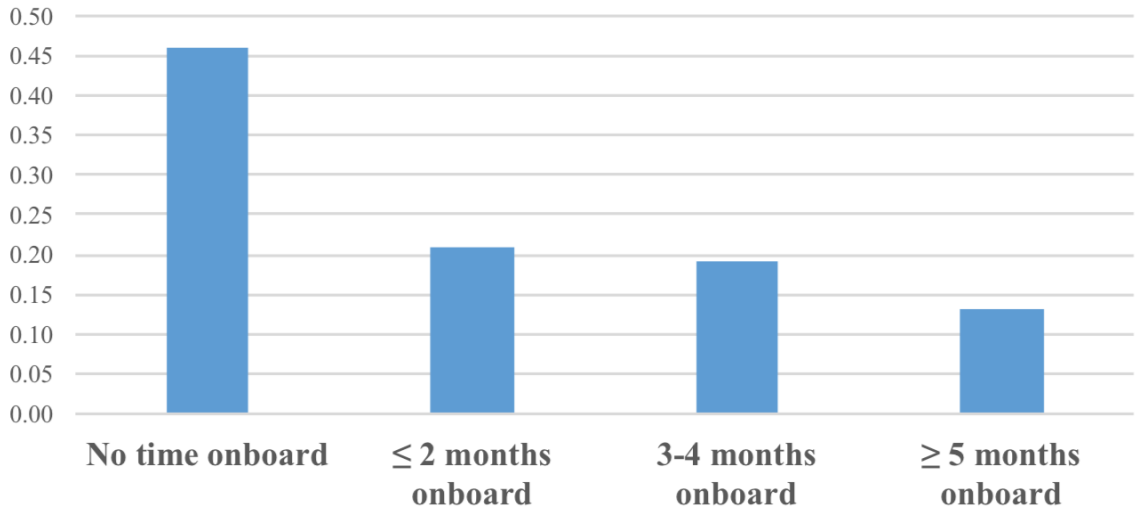
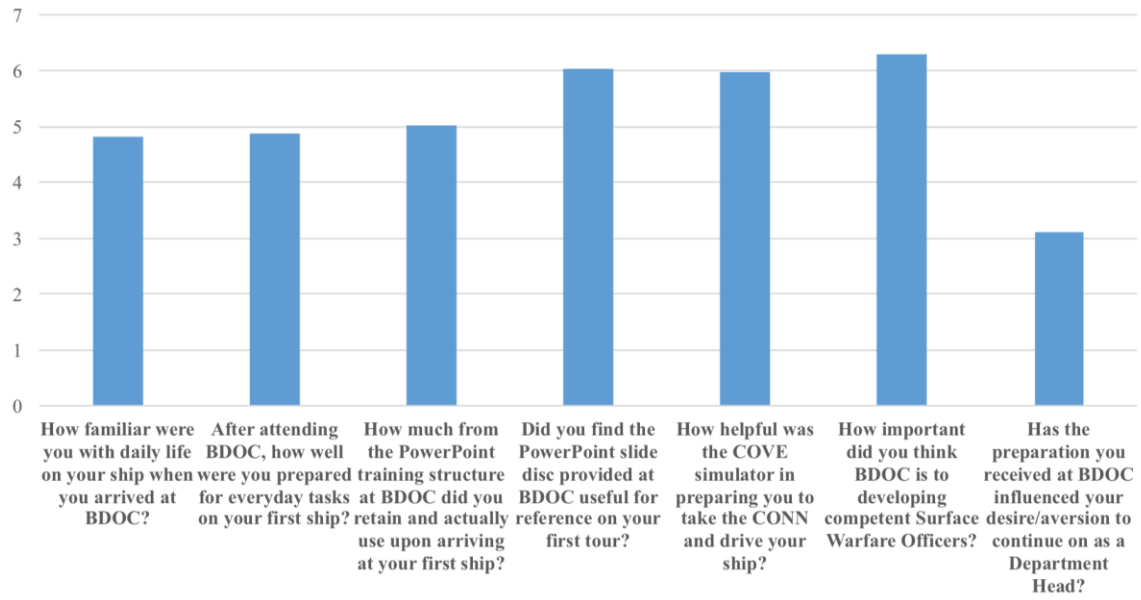


Figure 1. NETC E2E Process Graphic. Source: NETC (2014).



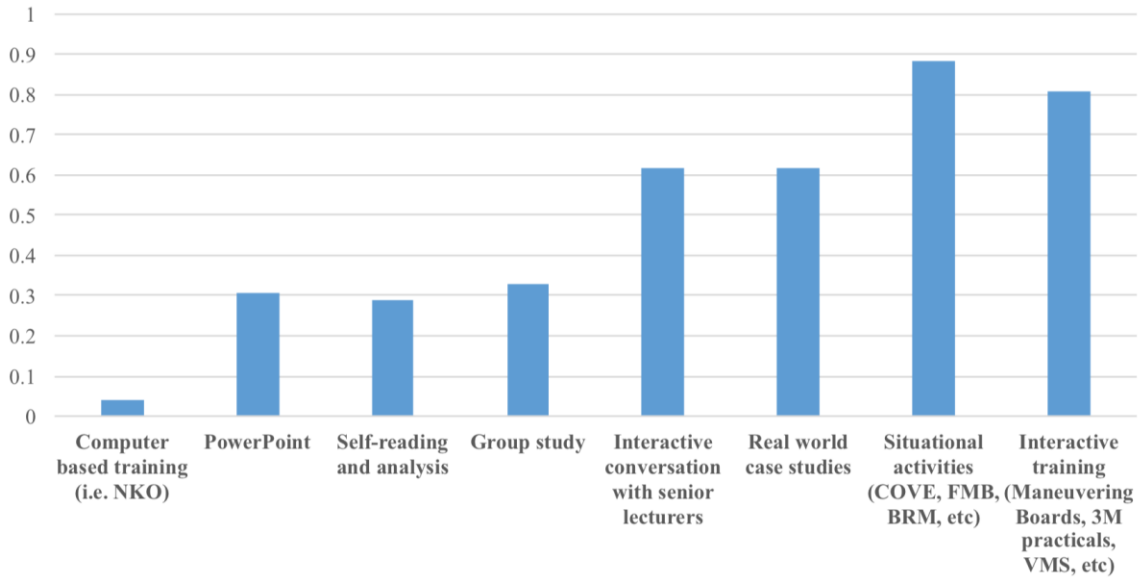
Data collection method outlined in Chapter II.

Figure 2. Time Spent Onboard Ship Prior to Attending BDOC



Data collection method outlined in Chapter II.

Figure 3. Mean Results of Subject Questions on a Scale of 1 to 10



Data collection method outlined in Chapter II.

Figure 4. Percentage of Students Who Preferred Each Learning Method

MILITARY PAY GRADE	AVERAGE BASIC PAY	ANNUAL DOD COMPOSITE RATE 2/	ANNUAL RATE BILLABLE TO OTHER FEDERAL AGENCIES 3/ 4/
O-10	$186,421 5/	$305,815	$312,906
O-9	186,421	302,623	309,714
O-8	173,829	286,683	293,774
O-7	151,162	261,694	268,785
O-6	127,945	233,013	240,104
O-5	103,109	198,950	206,041
O-4	86,913	176,759	183,850
O-3	69,963	151,878	158,969
O-2	54,338	121,988	129,079
O-1	39,923	96,454	103,545
WO-5	$104,090	$189,033	$196,124
WO-4	89,723	171,547	178,638
WO-3	75,823	151,367	158,458
WO-2	63,224	133,467	140,558
WO-1	----	----	----
E-9	$76,814	$147,032	$154,123
E-8	60,488	124,374	131,465
E-7	52,052	112,385	119,476
E-6	42,215	97,742	104,833
E-5	33,443	82,191	89,282
E-4	27,131	66,101	73,192
E-3	23,156	54,602	61,693
E-2	21,309	48,679	55,770
E-1	18,075	43,217	50,308
CADETS	$12,822	$19,097	Not applicable

Notes:

1/ Reimbursement procedures for Foreign Military Sales (FMS) are specifically addressed in the DoD FMR Vol. 15 Section 070203. Reimbursement of the acceleration factor shall be deposited into the Defense Health Program (97*0130). Reimbursement of the per capita normal cost for Medicare-eligible retiree health care (MERHC) accrual shall be deposited into the Miscellaneous Receipts Account 3041.

2/ The annual DoD composite rate includes the following military personnel appropriation costs: average basic pay plus retired pay accrual, Medicare-eligible retiree health care (MERHC) accrual, basic allowance for housing, basic allowance for subsistence, incentive and special pay, permanent change of station expenses, and miscellaneous pay. **Includes** a per capita normal cost of $3,866 for MERHC accrual -- **see Tab K-1**.

3/ The annual rate billable to Other Federal Agencies recovers additional military related health care costs financed by the Defense Health Program. The annual billable rate includes an acceleration factor of $10,957 for all personnel. Reimbursement of the acceleration factor shall be deposited into the Defense Health Program (97*0130). **Excludes** a per capita normal cost of $3,866 for MERHC accrual -- **see Tab K-1**.

4/ To compute a Daily Rate, apply a factor of .00439. To compute an Hourly Rate, apply a factor of .00055.

5/ Basic pay for these officers is limited to the rate of basic pay for Level II of the Executive Schedule, which is currently projected to be $186,421 for fiscal year (FY) 2017.

Figure 5. Military Composite Standard Pay and Reimbursement Rates, Department of the Navy for Fiscal Year 2017. Source: Roth (2016).

Table 1. Summary Statistics of Respondents

	Mean	s.d	min	max
Male	0.69	0.47		
Age	25.94	2.71	23	33
Commissioning Source				
USNA	0.25	0.44		
ROTC	0.42	0.50		
OCS	0.33	0.47		
Not Prior Enlisted	0.88	0.38		
Stationed in San Diego (As opposed to Norfolk)	0.65	0.48		
Time spent onboard ship before BDOC				
No time onboard ship	0.46	0.50		
≤2 months onboard	0.21	0.41		
3-4 months onboard	0.19	0.40		
≥5 months onboard	0.13	0.34		
Observations	52			

Notes:

Data collection method outlined in Chapter II.

1. Rank and BDOC graduation date were removed from the demographic data set due to low relevance.

2. 1 respondent for Male/Female and 1 respondent for BDOC location left these questions blank. The blank answers were filled in with the modal value

Table 2. Summary Statistics of Responses to Subjective Questions Regarding BDOC

	Mean	s.d	min	max	Low value	High value
Subject questions (0-10 scale)						
How familiar were you with daily life on your ship when you arrived at BDOC?	4.81	2.72	1	10	(1) I had no idea what shipboard life was like	(10) I knew exactly what shipboard life was
After attending BDOC, how well were you prepared for everyday tasks on your first ship?	4.88	1.99	2	9	(1) Not prepared at all	(10) Extremely well prepared
How much from the PowerPoint training structure at BDOC did you retain and actually use upon arriving at your first	5.02	1.96	2	9	(1) I retained and used nothing	(10) I retained and used everything
Did you find the PowerPoint slide disc provided at BDOC useful for reference on your first tour?	6.02	2.59	1	10	(1) Not useful	(10) Extremely helpful
How helpful was the COVE simulator in preparing you to take the CONN and drive your ship?	5.96	2.32	1	10	(1) Not useful	(10) Extremely helpful
How important did you think BDOC is to developing competent Surface Warfare Officers?	6.29	2.05	1	10	(1) Not useful	(10) Mission Critical
Has the preparation you received at BDOC influenced your desire/aversion to continue on as a Department Head?	3.12	2.47	1	10	(1) No influence	(10) High influence
Would you be more likely to stay on as a Department Head if you were better prepared for your first several tours?						
Yes	0.46	0.50				
No	0.15	0.36				
Maybe	0.38	0.49				
Yes/Maybe	0.85	0.36				
No/Maybe	0.54	0.50				
What forms of training would you say are most effective for your individual learning and retention?						
Computer based training (i.e. NKO)	0.04	0.19				
PowerPoint	0.31	0.47				
Self-reading and analysis	0.29	0.46				
Group study	0.33	0.47				
Interactive conversation with senior lecturers	0.62	0.49				
Real world case studies	0.62	0.49				
Situational activities (COVE, FMB, BRM, etc)	0.88	0.32				
Interactive training (Maneuvering Boards, 3M practicals, VMS, etc)	0.81	0.40				
Observations	52					

Notes:

Data collection method outlined in Chapter II.

1. Subject questions are on a 1–10 scale, with 1 being the most negative result and 10 being the most positive result.

2. Forms of training were presented to subjects as a list of potentials and subjects were asked to check applicable methods.

Table 3. Regression Results Showing Correlation Between Subject Information and Subject Responses to Subjective Questions

Outcome =	How familiar were you with daily life on your ship when you arrived at BDOC?	After attending BDOC, how well were you prepared for everyday tasks on your first ship?	How much from the PowerPoint training structure at BDOC did you retain and actually use upon arriving at your first ship?	Did you find the PowerPoint slide disc provided at BDOC useful for reference on your first tour?	How helpful was the COVE simulator in preparing you to take the CONN and drive your ship?	How important did you think BDOC is to developing competent Surface Warfare Officers?	Has the preparation you received at BDOC influenced your desire/aversion to continue on as a Department Head?
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Male	0.12	-0.89*	-0.93	-0.10	-0.85	-0.75	1.24*
	(0.60)	(0.52)	(0.63)	(0.89)	(0.76)	(0.64)	(0.73)
Age	-0.08	0.25	-0.09	-0.03	0.24	0.11	-0.08
	(0.20)	(0.17)	(0.21)	(0.29)	(0.25)	(0.21)	(0.24)
Commissioning Source							
USNA	2.25**	1.81**	-0.05	0.81	0.33	-0.45	0.12
	(1.00)	(0.86)	(1.04)	(1.48)	(1.27)	(1.06)	(1.22)
ROTC	1.30	2.48***	0.41	0.43	0.92	0.50	1.33
	(0.98)	(0.84)	(1.02)	(1.46)	(1.24)	(1.04)	(1.20)
Not Prior Enlisted	-1.11	-0.29	-1.69	0.55	2.43*	1.74	-2.64**
	(1.04)	(0.89)	(1.08)	(1.54)	(1.31)	(1.10)	(1.26)
Stationed in San Diego (As opposed to Norfolk)	0.71	1.02*	-0.10	0.79	0.97	1.40	0.44
	(0.62)	(0.53)	(0.65)	(0.92)	(0.79)	(0.66)	(0.76)
Spent time on ship before BDOC							
≤2 months onboard	2.26***	1.96***	0.33	0.78	0.46	0.78	-0.71
	(0.76)	(0.65)	(0.79)	(1.13)	(0.96)	(0.81)	(0.93)
3-4 months onboard	3.70***	2.62***	1.13	1.55	0.66	1.51	0.81
	(0.79)	(0.68)	(0.82)	(1.16)	(0.99)	(0.83)	(0.96)
≥5 months onboard	5.44***	0.37	-0.06	1.07	0.29	-0.54	-2.48
	(0.89)	(0.76)	(0.92)	(1.31)	(1.12)	(0.94)	(1.08)
Observations	52	52	52	52	52	52	52
Mean of Dependant Variable	4.81	4.88	5.02	6.02	5.96	6.29	3.12

Notes:

Data collection method outlined in Chapter II.

1. Excluded categories include rank, BDOC graduation date, commissioning source OCS, and no time onboard ship.

2. P-value: *<0.1, **<0.05, ***< 0.01

3. Standard error in parentheses

4. 1 respondent for Male/Female and 1 respondent for BDOC location left these questions blank. The blank answers were filled in with the modal value

Table 4. Regression Results Showing Correlation for Early Preparation's Influence on Continuing as a Department Head.

Outcome =	DH Yes/Maybe	DH No	DH Yes	DH No/Maybe
	(1)	(2)	(3)	(4)
Male	-0.24**	0.24**	-0.02	0.02
	(0.10)	(0.10)	(0.16)	(0.16)
Age	-0.03	0.03	0.02	-0.02
	(0.03)	(0.03)	(0.05)	(0.05)
Commissioning Source				
USNA	-0.48*	0.48*	-0.39	0.39
	(0.17)	(0.17)	(0.26)	(0.26)
ROTC	-0.29	0.29	-0.28	0.28
	(0.17)	(0.17)	(0.25)	(0.25)
Not Prior Enlisted	-0.20	0.20	-0.01	0.01
	(0.18)	(0.18)	(0.27)	(0.27)
Stationed in San Diego (As opposed to Norfolk)	0.18	-0.18	0.25	-0.25
	(0.11)	(0.11)	(0.16)	(0.16)
Spent time on ship before BDOC				
≤2 months onboard	-0.09	0.09	0.09	-0.09
	(0.13)	(0.13)	(0.20)	(0.20)
3-4 months onboard	-0.22	0.22	0.10	-0.10
	(0.14)	(0.14)	(0.20)	(0.20)
≥5 months onboard	-0.11	0.11	0.08	-0.08
	(0.15)	(0.15)	(0.23)	(0.23)
Observations	52	52	52	52
Mean of Dependant Variable	0.85	0.15	0.46	0.54

Notes:

Data collection method outlined in Chapter II.

1. Excluded categories include rank, BDOC graduation date, commissioning source OCS, and no time onboard ship.

2. P-value: *<0.1, **<0.05, ***< 0.01

3. Standard error in parentheses

4. 1 respondent for Male/Female and 1 respondent for BDOC location left these questions blank. The blank answers were filled in with the modal value.

5. Subject responses when asked "Would you be more likely to stay on as a Department Head if you were better prepared for your first several tours?"

Table 5. Regression Results Showing Correlation Between Subject Information and Subjects' Preferred Forms of Learning

Outcome =	Computer based training (i.e. NKO)	PowerPoint	Self-reading and analysis	Group study	Interactive conversation with senior lecturers	Real World Case Studies	Situational activities (COVE, FMB, BRM, etc)	Interactive training (Maneuvering Boards, 3M practicals, VMS, etc)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Male	0.04	-0.12	-0.07	-0.28*	0.10	-0.12	0.05	-0.14
	(0.06)	(0.16)	(0.15)	(0.15)	(0.16)	(0.16)	(0.11)	(0.14)
Age	0.00	0.06	0.02	0.03	-0.03	0.04	-0.05	-0.01
	(0.02)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.03)	(0.04)
Commissioning Source								
USNA	0.05	-0.08	-0.01	0.14	-0.26	0.05	-0.27	-0.26
	(0.09)	0.26	(0.26)	(0.25)	(0.27)	(0.26)	(0.18)	(0.23)
ROTC	0.10	0.03	0.11	0.27	-0.13	-0.05	-0.17	-0.11
	(0.09)	(0.25)	(0.25)	(0.24)	(0.26)	(0.26)	(0.17)	(0.22)
Not Prior Enlisted	-0.24**	0.17	-0.16	-0.35	0.32	0.55*	-0.20	-0.02
	(0.10)	(0.27)	(0.27)	(0.25)	(0.28)	(0.27)	(0.18)	(0.23)
Stationed in San Diego (As opposed to Norfolk)	0.09	-0.13	-0.05	-0.23	-0.12	0.14	0.13	-0.03
	(0.06)	(0.16)	(0.16)	(0.15)	(0.17)	(0.16)	(0.11)	(0.14)
Spent time on ship before BDOC								
≤2 months onboard	0.08	-0.07	0.03	-0.03	0.12	0.39*	-0.08	0.00
	(0.07)	(0.20)	(0.20)	(0.19)	(0.20)	(0.20)	(0.13)	(0.17)
3-4 months onboard	0.08	-0.04	-0.28	-0.17	0.01	0.35*	0.04	0.05
	(0.07)	(0.20)	(0.20)	(0.19)	(0.21)	(0.21)	(0.14)	(0.18)
≥5 months onboard	-0.10	-0.22	0.05	0.04	0.05	0.38	0.07	-0.10
	(0.08)	(0.23)	(0.23)	(0.22)	(0.24)	(0.23)	(0.15)	(0.20)
Observations	52	52	52	52	52	52	52	52
Mean of Dependant Variable	0.04	0.31	0.29	0.33	0.62	0.62	0.88	0.81

Notes:

Data collection method outlined in Chapter II.

1. Excluded categories include rank, BDOC graduation date, commissioning source OCS, and no time onboard ship.

2. P-value: *<0.1, **<0.05, ***< 0.01

3. Standard error in parentheses

4. 1 respondent for Male/Female and 1 respondent for BDOC location left these questions blank. The blank answers were filled in with the modal value.

APPENDIX A. STUDENT SURVEY

Potential Survey Questions:

1) Male/Female

2) BDOC graduation date?

MM/YYYY

3) Age _____

4) Rank
- ❑ O-1
- ❑ O-2
- ❑ O-3

5) Where did you commission?
- ❑ USNA
- ❑ ROTC
- ❑ OCS

6) Prior enlisted
- ❑ Yes
- ❑ No

7) Where did you attend BDOC?
- ❑ San Diego, CA
- ❑ Norfolk, VA
- ❑ Newport, RI

8) Did you go to your ship before you attended BDOC?
- ❑ Yes
- ❑ No

8a) f so, how long were you onboard your ship before attending BDOC?
- ❑ <1-2 months
- ❑ 3-4 months
- ❑ 5-6 months
- ❑ >6 months
- ❑ N/A

9) What forms of training would you say are most effective for your individual learning and retention? Check all that apply.
- ❑ PowerPoint presentations
- ❑ Interactive conversation with senior lecturers
- ❑ Situational activities (COVE, FMB, BRM, etc)
- ❑ Real world case studies
- ❑ Self-reading and analysis
- ❑ Group study
- ❑ Interactive training (Maneuvering Boards, 3M practicals, VMS, etc.)
- ❑ Computer based training (i.e. NKO)

Please answer the following questions on a scale of 1-10:

10) How familiar were you with daily life on your ship when you arrived at BDOC?

I had no idea what shipboard life was like ---------- I knew exactly what shipboard life was like

1 2 3 4 5 6 7 8 9 10

11) After attending BDOC, how well were you prepared for everyday tasks on your first ship?

Not Prepared at All ---------- Extremely Well Prepared

1 2 3 4 5 6 7 8 9 10

12) How much from the PowerPoint training structure at BDOC did you retain and actually use upon arriving at your first ship?

I retained and used nothing ---------- I retained and used everything

1 2 3 4 5 6 7 8 9 10

13) Did you find the PowerPoint slide disc provided at BDOC useful for reference on your first tour?

Not useful ---------- Extremely helpful

1 2 3 4 5 6 7 8 9 10

14) How helpful was the COVE simulator in preparing you to take the CONN and drive your ship?

Not useful ---------- Extremely helpful

1 2 3 4 5 6 7 8 9 10

15) How important do you think BDOC is to developing competent Surface Warfare Officers?

Not useful ---------- Mission Critical

1 2 3 4 5 6 7 8 9 10

16) Has the preparation you received at BDOC influenced your desire/aversion to continue on as a Department Head?

No influence ---------- High influence

1 2 3 4 5 6 7 8 9 10

17) Would you be more likely to stay on as a Department Head if you were better prepared for your first several tours?

- ❑ Yes
- ❑ Maybe
- ❑ No

APPENDIX B. FOCUS GROUP SCRIPT

Potential Interview Script:

Did you know what your billet would be prior to arriving at BDOC?

If so, did this influence what you focused on during BDOC?

Did you go to your ship prior to attending BDOC?

Do you feel it was or would have been an advantage or disadvantage for you to be sent to your ship before arriving at BDOC?

Do you feel you were prepared to perform your billeted duties early in your first sea tour after attending BDOC?

Do you feel you were prepared to perform your admin and other shipboard duties (DC, collateral duties, etc.) early in your first sea tour after attending BDOC?

Do you feel you were prepared to safely stand watch and drive a warship after attending BDOC?

Was enough focus given to ship driving / handling during BDOC?

Knowing what you know now, were there any areas of knowledge you feel were not adequately covered at BDOC?

What were the teaching methods you experienced during BDOC?

Do you feel those teaching methods were effective and efficient to train SWOs for the Fleet?

Do you feel BDOC should be shorter or longer; or is it sufficient at 8 weeks in length?

Do you feel anything could be changed to improve the effectiveness of the training given at BDOC?

How did the training you received at BDOC impact your view of the SWO organization; and did it influence your thoughts, at this point in your career, of continuing your career as a Department Head?

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LIST OF REFERENCES

Bureau of Labor Statistics. (2017a). Instructional coordinators [Fact sheet]. Retrieved from https://www.bls.gov/ooh/education-training-and-library/instructional-coordinators.htm

Bureau of Labor Statistics. (2017b). Graphic designers [Fact sheet]. Retrieved from https://www.bls.gov/ooh/arts-and-design/graphic-designers.htm

Department of the Navy. (2017a). *Comprehensive review of recent surface force incidents.* Norfolk, VA: United States Fleet Forces Command. Retrieved from http://s3.amazonaws.com/CHINFO/Comprehensive+Review_Final.pdf

Department of the Navy. (2017b). *United States Navy fact file - Yard patrol craft—YP [Fact sheet]*. Retrieved from http://www.navy.mil/navydata/fact_display.asp?cid=4200&tid=2500&ct=4

Edwards, C. (2017, September 20). *Reforming federal worker pay and benefits.* Retrieved from https://www.downsizinggovernment.org/federal-worker-pay

Naval Education and Training Command. (2014). *NETC Course Development, Revision, and Modification End-to-End (E2E) Process Standard Operating Procedures (SOP).* Norfolk, VA: Learning and Development Division, Naval Education and Training Command. Retrieved from https://navy-training-transformation1.wikispaces.com/file/view/End+to+End+Process+SOP+%287-11-14%29+Final.pdf

Roth, J. (March 09, 2016). *FY 2017 Department of Defense (DoD) military personnel composite standard pay and reimbursement rates [Memorandum]*. Washington, DC: Office of the Under Secretary of Defense. Retrieved from http://comptroller.defense.gov/Portals/45/documents/rates/fy2017/2017_k.pdf

Sutton, G. (2010, May 13). *A new ship in the yard.* PropTalk. Retrieved from https://issuu.com/cdeere/docs/junpt2010

Tufte, E. (2006). *The cognitive style of PowerPoint: Pitching out corrupts within.* Cheshire, CT: Graphics Press.

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